

Abstract of the Disclosure:

A trench capacitor is formed in a trench, which is disposed in a substrate. The trench is filled with a conductive trench filling which functions as an inner capacitor electrode. An
5 epitaxial layer is grown on the sidewall of the trench on the substrate. A buried strap is disposed between the conductive trench filling with the second intermediate layer and the epitaxially grown layer. A dopant outdiffusion formed from the buried strap is disposed in the epitaxially grown layer.
10 Through the epitaxially grown layer, the dopant outdiffusion is further removed from a selection transistor disposed beside the trench, as a result of which it is possible to avoid short-channel effects in the selection transistor.

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